Amendments to the Claims

This listing of the claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Previously presented) A composition comprising a crystalline form of a TNF-α-converting enzyme (TACE) polypeptide, wherein the crystalline form of the TACE polypeptide is of monoclinic space group $P2_1$ and has unit cell dimensions a=61.38 Å, b=126.27 Å, c=81.27Å, and β=107.41°.

2. (Previously presented) A composition according to claim 1, wherein the TACE polypeptide comprises a TACE catalytic domain (TCD).

3. (Original) A composition according to claim 1, wherein the TACE polypeptide is the expression product of a polynucleotide encoding a pro domain and a catalytic domain of TACE.

4. (Original) A composition according to claim 1, wherein the TACE polypeptide is the expression product of a polynucleotide encoding amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8.

5. (Currently amended) A composition according to claim 1 [[4]], wherein the TACE polypeptide consists of the expression product of a polynucleotide encoding amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8, and wherein the expression product of the polynucleotide is further substituted such that amino acid residue Ser266 as set forth in SEQ ID NO:8 is changed to Ala and amino acid residue Asn452 as set forth in SEQ ID NO:8 is changed to Gln, and wherein the sequence Gly-Ser-$(His)_6$ (SEQ ID NO:2) is fused to the C-terminus of the expression product.

6. (Cancelled)

7. (Previously presented) A composition according to claim 1, further comprising a hydroxamate-based binding partner.

8. (Previously presented) A composition according to claim 7, wherein the hydroxamate-based binding partner is N-{D,L-2-(hydroxyaminocarbonyl)methyl-4-methylpentanoyl}-L-3-amino-2-dimethylbutanoyl-L-alanine,2-(amino)ethyl amide.

9. (Previously presented) A composition according to claim 1, wherein the crystal diffracts x-rays to 2.0 Å.

10. (Cancelled)

11. (Previously presented) A composition according to claim 2, wherein the unit cell of the crystal comprises four crystallographically independent TACE catalytic domains of the TACE polypeptide.

12. (Previously presented) A composition according to claim 11, wherein the TACE catalytic domains of the TACE polypeptide are in an asymmetric unit.

13. (Cancelled)

14. (Currently amended) A composition according to claim 1, wherein ~~the the crystalline form of~~ the TACE polypeptide of the crystalline form has structure coordinates according to Table 1.

15. (Currently amended) A method for crystallizing a TACE polypeptide, comprising:

(A) mixing a solution comprising:

(i) a TACE polypeptide, wherein the TACE polypeptide is: (A) the expression product of a polynucleotide encoding amino acid residues 1-447 of TACE as set forth in SE ID NO:8; or (B) the expression product of a polynucleotide encoding amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8, and wherein the expression product of the polynucleotide is further substituted such that amino acid residue Ser266

as set forth in SEQ ID NO:8 is changed to Ala and amino acid residue Asn452 as set forth in SEQ ID NO:8 is changed to Gln; and

(ii) a hydroxamate-based binding partner,

with a crystallization buffer, wherein the crystallization buffer ~~comprises sodium citrate~~ is selected from the group consisting of 0.1M Na Citrate pH 5.4, 20% w/v PEG 4000, and 20% v/v isopropanol; 0.1M Na Citrate pH 5.0 and 40% v/v ethanol; and 0.1M Na Citrate pH 8.7, 20% w/v PEG 4000, and 20% v/v isopropanol; and

(B) crystallizing the mixture of step (A) by drop vapor diffusion to form a crystalline precipitate.

16. (Currently amended) The method according to claim 15, further comprising:

(C) transferring seeds from the crystalline precipitate formed by the drop vapor diffusion, along with a crystalline promoter, into a mixture of a concentrated solution comprising ~~a~~ the TACE polypeptide and the hydroxamate-based binding partner ~~substrate~~, and ~~a crystalline~~ the crystallization buffer; and (D) crystallizing the mixture of step (C) by drop vapor diffusion to form a crystal.

17. (Cancelled)

18. (Previously presented) The method of claim 15, wherein the hydroxamate-based binding partner is N-{D,L-2-(hydroxyaminocarbonyl)methyl-4-methylpentanoyl}-L-3-amino-2-dimethylbutanoyl-L-alanine, 2-(amino)ethyl amide.

19. (Original) The method of claim 15, wherein crystallization is at a temperature ranging from 4 to 20 degrees Celsius.

20. (Currently amended) The method of claim 15, wherein the TACE polypeptide in solution ~~comprising the TACE polypeptide and the binding partner~~ is at a concentration of about 5mg/mL to about 12 mg/mL in a buffer.

21. (Original) The method of claim 20, wherein the solution is mixed with the crystallization buffer in a 1:1 ratio.

22. (Previously presented) A TACE crystal made by co-crystallizing a TACE polypeptide with a hydroxamate-based binding partner, wherein the TACE crystal is of monoclinic space group $P2_1$ and has the unit cell dimensions a=61.38 Å, b=126.27 Å, c=81.27 Å, and β=107.41°.

23-28. (Cancelled)

29. (Currently amended) The TACE crystal of claim 22, wherein the TACE polypeptide consists essentially of the amino acid sequence as shown in Table 1 (SEQ ID NO:11). ~~is the expression product of the polynucleotide encodes comprises amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8~~.

30. (Currently amended) The TACE crystal of claim 31 [[22]], wherein the ~~crystal of the~~ TACE polypeptide and the hydroxamate-based binding partner of the crystal ~~has~~ have the structure coordinates according to Table 1.

31. (Currently amended) The TACE crystal of claim 29 [[22]], wherein the hydroxamate based binding partner is N-{D,L-2-(hydroxyaminocarbonyl)methyl-4-methylpentanoyl}-L-3-amino-2-dimethylbutanoyl-L-alanine, 2-(amino)ethyl amide.

32. (Previously presented) A composition comprising a crystalline form of a TNF-α-converting enzyme (TACE) polypeptide and a hydroxamate based binding partner, wherein:

(i) the crystalline form is of monoclinic space group $P2_1$; and

(ii) the TACE polypeptide is; (A) the expression product of a polynucleotide encoding amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8, or (B) the expression product of a polynucleotide encoding amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8, and wherein the expression product of the polynucleotide is further substituted such that amino acid residue Ser266 as set forth in SEQ ID NO:8 is changed to Ala and amino acid residue Asn452 as set forth in SEQ ID NO:8 is changed to Gln.

33. (Currently amended) The composition of claim 32, wherein ~~the crystalline form of~~ the TACE polypeptide and hydroxamate-based binding partner of the crystalline form diffract ~~diffracts~~ x-rays to 2 Å, and ~~has~~ have a unit cell comprising four crystallographically independent TACE catalytic domains (TCDs) in an asymmetric unit.

34. (Previously presented) The composition of claim 33, wherein the ~~crystalline form of the~~ TACE polypeptide and hydroxamate-based binding partner of the crystalline form have ~~has~~ the structure coordinates according to Table 1.

35. (Previously presented) The composition of claim 37 [[34]], wherein the hydroxamate-based binding partner is N-{D,L-2-(hydroxyaminocarbonyl)methyl-4-methylpentanoyl}-L-3-amino-2-dimethylbutanoyl-L-alanine, 2-(amino)ethyl amide.

36. (Currently amended) The composition of claim 35, wherein ~~the crystalline form the crystalline form of~~ the TACE polypeptide and hydroxamate-based binding partner of the crystalline form have ~~has~~ unit cell dimensions a=61.38 Å, b=126.27 Å, c=81.27 Å, and β=107.41°.

37. (New) The composition of claim 32, wherein the TACE polypeptide consists essentially of the amino acid sequence as shown in Table 1 (SEQ ID NO:11).

38. (New) A composition according to claim 8, wherein the TACE polypeptide consists essentially of the amino acid sequence as shown in Table 1 (SEQ ID NO:11).

39. (New) A composition comprising a crystalline form of a TNF-α-converting enzyme (TACE) polypeptide and a hydroxamate based binding partner, wherein:

(i) the crystalline form is of monoclinic space group $P2_1$ and has unit cell dimensions a=61.38 Å, b=126.27 Å, c=81.27 Å, and β=107.41°;

(ii) the TACE polypeptide consists of the expression product of a polynucleotide encoding amino acid residues 1-477 of TACE as set forth in SEQ ID NO:8, and wherein the expression product of the polynucleotide is further substituted such that amino acid

residue Ser266 as set forth in SEQ ID NO:8 is changed to Ala and amino acid residue Asn452 as set forth in SEQ ID NO:8 is changed to Gln, and wherein the sequence Gly-Ser-$(His)_6$ (SEQ ID NO:2) is fused to the C-terminus of the TACE polypeptide; and

(iii) the hydroxamate-based binding partner is N-{D,L-2-(hydroxyaminocarbonyl)methyl-4-methylpentanoyl}-L-3-amino-2-dimethylbutanoyl-L-alanine, 2-(amino)ethyl amide.